product user guide

mabey hire
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Title	Issue	Date
Trench Sheeting and Light Piling Accessories	8	June 2015

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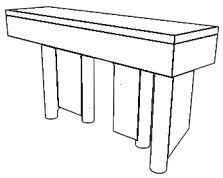
1. Introduction

This booklet is intended to provide basic information for users of the Mabey Trench Sheeting and Light Piling Accessories and to draw the client's attention to the practical aspects of using these accessories. In particular, the client's attention is drawn to the size and weights of the components and the need for planning the lifting operations involved. It is assumed that clients are familiar with general safe practices applicable to this type of work.

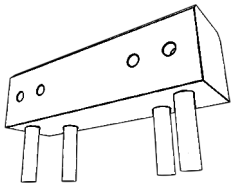
This booklet should be read in conjunction with the User Information for Trench Sheeting and Light Piling.

Refer to Appendix A for details of our site demonstrator service.

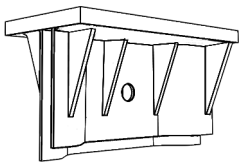
2. Identification of Accessories



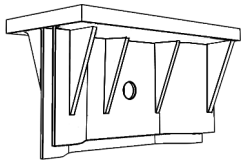
Muiltlock / Multisheet Drive Cap
Code: MLOCK-DCAP
Size: 200 x 100 x 380
Weight: 20 Kg



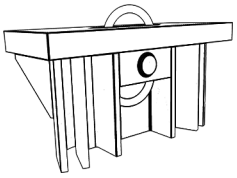
M11 Drive Cap
Code: M11-DCAP
Size: 200 x 100 x 340
Weight: 27 Kg



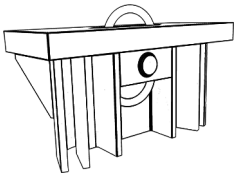
M8 Drive Cap
Code: M8-D/CAP
Size: 175 x 200 x 400
Weight: 23 Kg



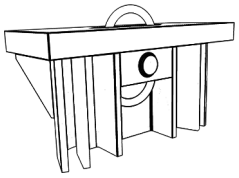
M12 Drive Cap
Code: M12-D/CAP
Size: 175 x 250 x 400
Weight: 29 Kg



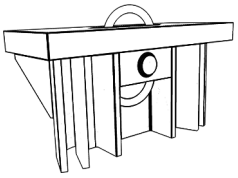
New Muiltlock / Multisheet Driving Cap
Code: MLOCK-DC
Size: 180 x 230 x 325
Weight: 30 Kg
Colour: Purple



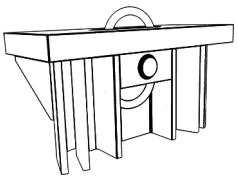
New M11 Driving Cap
Code: M11-DC
Size: 180 x 140 x 330
Weight: 21.3 Kg
Colour: Blue



New M8 Driving Cap
Code: M8-DC
Size: 180 x 140 x 400
Weight: 23.4 Kg
Colour: Orange



New M12 Driving Cap
Code: M12-DC
Size: 180 x 160 x 400
Weight: 26.6 Kg
Colour: Self Colour

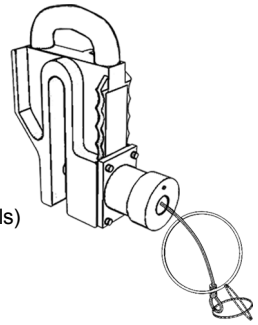


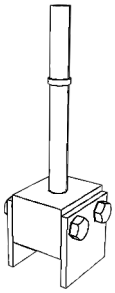
New M15 Driving Cap
Code: M15-DC
Size: 180 x 175 x 350
Weight: 25.4 Kg
Colour: Yellow

Euro Ground Release Shackle
Code: EGRS
Weight: 17.5 Kg

SWL: 40 kN (Vertical)
20 kN (Horizontal)

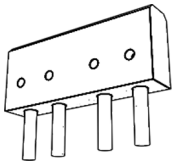
(See pages 4-5 for further details)



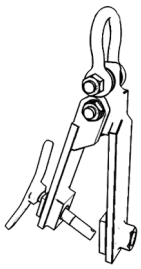


Rammer Stem
Code: USHANK-RSTEM
Weight: 3.5 Kg

M11 'U' Head
Code: M11UHEAD
Weight: 13.5 Kg



M6 / M7 Drive Cap
Code: T/S DCAP
Size: 225 x 60 x 305
Weight: 20 Kg



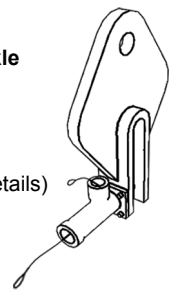
Trench Sheet Extractor
Code: T/S-EXT
Colour: Grey
or Code: M8/M12-EXT
Colour: Blue
Weight: 12 Kg

(See page 6 for further details)

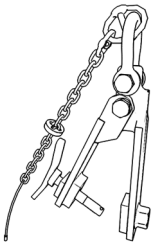
Quick Release Shackle
Code: QRS
Weight: 18 Kg

SWL: 40 kN

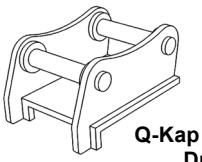
(See page 3 for further details)



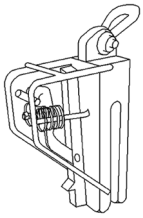
2. Identification of Accessories Cont'd



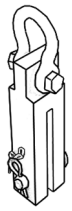
Trench Sheet Extractor c/w Safety Chain
Code: T/S-EXT-SC or
: M8/M12-EXT-SC
(See separate user guide for further details)



Q-Kap Trenchsheet Drive Cap
Code: Q-KAP4 or
: Q-KAP6
(See separate user guide for further details)



Camlok Quick Release Shackle
Code: QRSH2T or
: QRSH3T
(See separate user guide for further details)



Trench Sheet and Piling Extractor
Code: 3T-EXT or 9T-EXT
(See separate user guide for further details)

3. General Guidance Notes

3.1 Usage

Correct usage of the trench sheeting drive caps will result in quicker / easier installation of the sheets, and can also significantly reduce damage charges.

3.2 Checks Prior To and During Use

3.2.1 Certification

All Euro Ground Release Shackles (EGRS), Trench Sheet Extractors (T/S-EXT and M8/M12-EXT) and Quick Release Shackles (QRS) hired to customers are supplied complete with a test certificate, and if it is more than 6 months since the equipment was tested, a Report of Thorough Examination is also supplied. These certificates state the items serial number, maximum S.W.L. and the date of test / examination.

Mabey Hire's depot staff will have checked certificates are valid before issue, but users are requested to double check this before using the equipment on site, and to return them to Mabey Hire for re-examination before the expiry date of the certificates. (Certificates are only valid for a maximum of six months from the date of test or examination).

3.2.2 New M8, M11, M12, M15 and Multisheet / Multilock Driving Caps

- Ensure the driving cap fits over the profile of the Light Piling Sheet without hindrance.
- Inspect periodically for cracks at welds.
- Ensure the lifting ring is in good repair and falls through the slot in the top plate. (New Drive Caps only).

3.2.3 M6 / M7 and M11 Driving Caps

- Ensure all four pegs are secure within the head and that the pegs are straight.

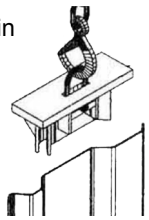
3.2.4 Multisheet and Multilock Drive Cap

- Ensure all four pegs are secure within the head and that the pegs are straight.
- Inspect periodically for cracks at welds.
- Ensure the lifting ring is in good repair and falls through the slot in the top plate (New drive caps only)

3.3 Fitting (See sketches below)

Attention is drawn to the weight of these products which are normally fitted at height. Responsibility for a safe system of work for fitting and removal of these products remains with the Client.

JCBP-028 Connector chain (SWL 11.2 Tonnes) or alternatively Chain and hook from excavator.

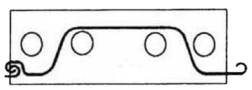


New M8, M11, M12, M15 or Multisheet / Multilock Drive Cap

M8, M11, M12, M15, Multisheet or Multilock Trench Sheet

Lifting Drive Cap into Position

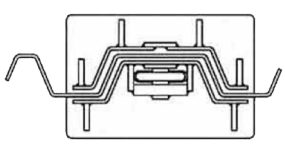
M6, M7 or M11 Trench Sheet



M6, M7 or M11 Driving Cap

Typical View on Underside of Drive Cap

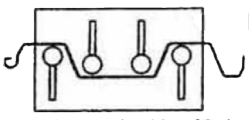
M8, M11, M12, M15, Multisheet or Multilock Trench Sheet



New M8, M11, M12, M15 or Multisheet / Multilock Drive Cap

Typical View on Underside of Drive Cap

Multisheet or Multilock Trench Sheet

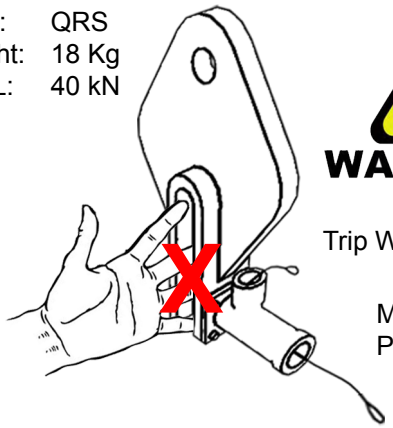


Multisheet / Multilock Drive Cap

Typical View on Underside of Drive Cap

4. Quick Release Shackle Details

Code: QRS
Weight: 18 Kg
S.W.L: 40 kN



WARNING

4.1 Identification

Check that the QRS has been supplied with a current Report of Thorough Examination and check its expiry date.

SAFETY NOTE

- When not in use or in general storage, the main plunger MUST be engaged and pushed fully forward.
- When handling the QRS, the operatives MUST NOT place their hands in between the Jaws of the extractor.

4.2 Usage

The Quick Release Shackle has been developed for lifting singular steel piles into position, and when the pile is held securely the shackle can be released safely from the ground. The Quick Release Shackle **should NOT be used for any other purpose**. The S.W.L. which is stamped on the body of the shackle, and also referred to on the documentation supplied with the QRS indicates the maximum safe load the shackle is intended to sustain as the piles are lifted into position.

4.3 Prior to use - Check Trench Sheets for suitability for use with the Shackle

The lifting hole size in the pile should be 25mm diameter or larger. The hole centre should not be less than 75mm from the top and not more than 150mm. Ensure that there is enough metal above the hole to prevent the metal tearing under the load and is not distorted to an extent that it will interfere with the safe operation of the shackle.

4.4 Method of Operation

4.4.1 Tie a length of soft rope to the loop on the main pin pull wire. The rope should be 1000mm longer than the pile length. Do NOT use a continuous loop as this will become snagged.

4.4.2 Before positioning the lifting shackles it is necessary to retract the main pin. Pull the main pin rope until the trip mechanism holds the main pin in its retracted position.

4.4.3 Separate the sheet piles on the stack to enable the main body of shackle to be slid over the pile head. With the main plunger barrel uppermost slide the fork of the shackle over the pile head with the pile in the throat of the shackle.

4.4.4 With the main plunger mechanism over the pile lifting hole release the trip wire. If the main pin does not locate directly through the hole move the main shackle body until the pin goes through the pile hole and into the main shackle body on the underside.

4.4.5 Take the weight of the pile with the crane and lift until the shackle is 750-1000mm above ground. **OPERATIVES SHOULD KEEP WELL CLEAR.** Block the pile up and lower onto the blocks which must be amply strong enough to take the weight of the pile. With no load on the shackle check that the main pin has gone right through the lifting hole and into the body of the shackle on the underside. It is not safe to lift unless the pin is right through.

4.4.6 With the main pin properly located the pile can then be lifted into position (in guides or similar). **OPERATIVES SHOULD KEEP WELL CLEAR UNTIL THE PILE IS SECURED**. It is advisable to tie the shackle ropes to the threader to prevent them being trapped, snagged or getting blown out of reach in strong winds.

4.4.7 To release the shackle once the pile is secure, simply pull on the release ropes. If there is a tendency to jam then take the weight of the shackle on the crane and pull again.

4.5 Important checks to be carried out during use

4.5.1 Ensure that the main pin has gone through both sides of the shackle body.

4.5.2 Ensure that there is enough metal above the sling hole to prevent tear-out.

4.5.3 Keep the plunger mechanism well lubricated.

4.5.4 Care should be taken to avoid the pull ropes getting snagged.

4.5.5 Do not use the shackle for pulling or extracting.

4.5.6 Ensure the pile is adequately supported before releasing the shackle.

4.5.7 If the product does not operate perfectly, **DO NOT** use and contact Mabey Hire Ltd immediately.

THE QUICK RELEASE SHACKLE SHOULD NOT BE MODIFIED / ALTERED AS THIS WILL INVALIDATE THE CERTIFICATION.

5. Euro Ground Release Shackle Identification and Usage

The Euro Ground Release Shackle (E.G.R.S.) is intended to be used for lifting trench sheets or light piles into position **one at a time**.

After the sheet is held securely in temporary guides the shackle can be released quickly and safely from ground level.

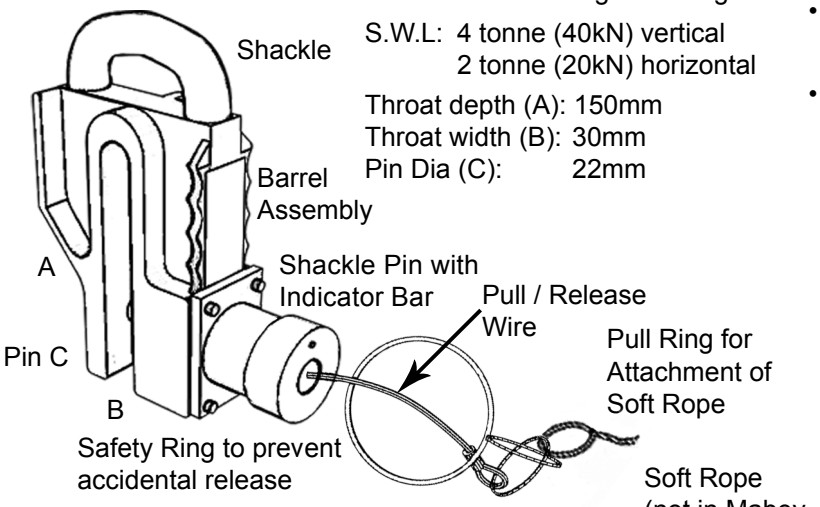
The E.G.R.S. is **not intended** to be used for other purposes and **should not** be used for pulling or extracting trench sheets or piles.

5.1 Identification

Code: EGRS Weight: 17.5 kg

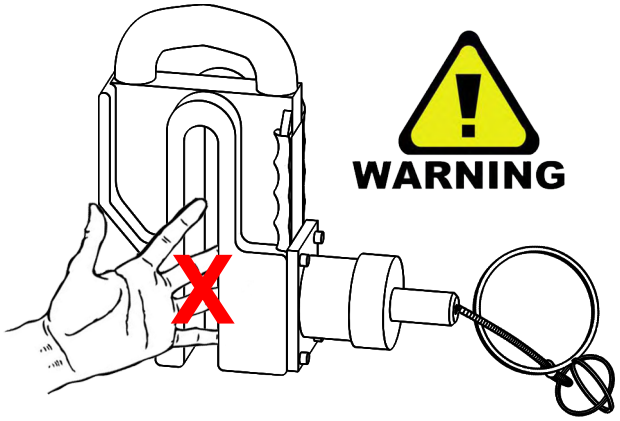
S.W.L: 4 tonne (40kN) vertical
2 tonne (20kN) horizontal

Throat depth (A): 150mm
Throat width (B): 30mm
Pin Dia (C): 22mm



SAFETY NOTE

- When not in use or in general storage, the main plunger MUST be engaged and pushed fully forward.
- When handling the EGRS, the operatives MUST NOT place their hands in between the jaws of the extractor.



5.2 Health & Safety - Key Features

5.2.1 Indicator Bar

The shackle pin extends through the back of the barrel assembly as an indicator bar. If the indicator bar is **flush** with the barrel it is safe to lift. If the indicator bar protrudes **Do not lift.**

5.2.2 Safety ring to prevent accidental release

A safety ring is provided which should be placed over the barrel assembly during lifting. This prevents accidental release of the shackle pin caused by poor working practices.

5.3 Checks before use

5.3.1 Certification

All E.G.R.S. hired to customers are supplied complete with a test certificate, and if it is more than six months since the E.G.R.S. was tested, a current certificate of examination is also supplied. These certificates state :-

- The E.G.R.S. serial number (which is also carried by the E.G.R.S.).
- The E.G.R.S. max. S.W.L. (which is also carried by the E.G.R.S.).
- The date of test / examination.

Mabey Hire's depot staff will have checked certificates are valid before issue, but users are requested to double check this before using the E.G.R.S. on site, and return them to Mabey Hire for re-examination before the expiry date of the certificates. (Certificates are only valid for a maximum of 6 months from the date of test or examination).

5.3.2 Weight to be lifted

Check that the weight to be lifted is within the S.W.L. of the shackle (i.e. less than 2.0 tonne if lifting sheets from a horizontal position).

5.3.3 Slinging hole in sheets

The sling hole should be 25mm diameter or larger. For Mabey sheets the hole centre-line position should not be less than 75mm from the top and no more than 150mm. For all sheets ensure there is enough metal above the slinging hole to prevent tear-out.

5.3.4 Site Operatives

Only operators with adequate training and experience in lifting and `control of' loads should be allowed to use the E.G.R.S. Ensure they are aware of how the shackle is intended to be used and its key safety features.

5.4 Method of operation

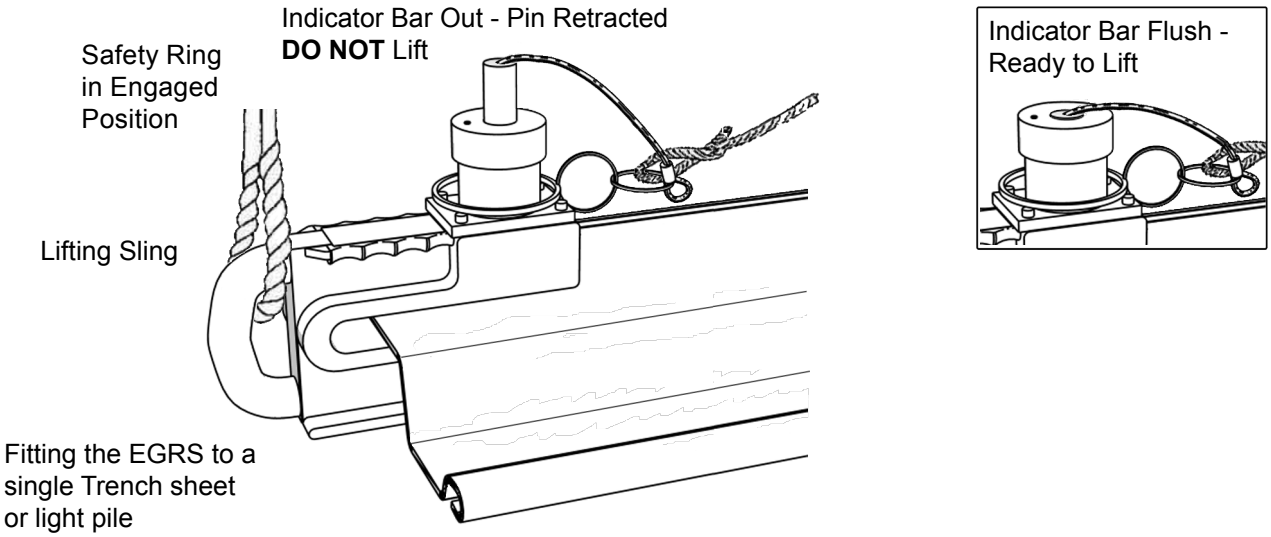
5.4.1 Tie a length of soft rope to the pull ring on the pull wire. The rope should be 1 metre (3 feet) longer than the pile length. Do **NOT** use a continuous loop as this will become snagged.

5.4.2 Before positioning the lifting shackle, it is necessary to retract the plunger. Pull the pull wire until the trip mechanism holds the main plunger in it's retracted position.

5.4.3 Separate the sheets on the stack to enable the main body of shackle to be slid over the head of the sheet to be lifted. With the plunger tube assembly uppermost, slide the fork of the shackle over the head of the sheet with the sheet in the throat of the shackle.

5.4.4 With the plunger over the sheet lifting hole, firmly tap the indicator bar end. If the plunger does not locate directly through the hole, move the shackle body until the plunger goes through the pile hole and into the shackle body on the underside. The indicator bar should be flush with the plunger barrel assembly. **Do not lift if the indicator bar protrudes from the plunger barrel assembly.**

5.4.5 Install the safety ring over the plunger tube assembly as shown below.


Indicator Bar Out - Pin Retracted
DO NOT Lift
Safety Ring in Engaged Position
Lifting Sling
Fitting the EGRS to a single Trench sheet or light pile
Indicator Bar Flush - Ready to Lift

5.4.6 With the plunger properly located, and the safety ring engaged, the sheet can be lifted into position. Operatives should keep well clear until the sheet is secured.

5.4.7 Ensure the rope does not become trapped or snagged during lifting. Ensure the sheet is held securely after lifting into position (in guides or similar).

5.4.8 To release the shackle, the safety ring must be first unhitched by `flicking' the release rope, then simply pull on the release rope. If there is a tendency to jam, then take the weight of the shackle on the crane and pull again.

5.5 Check list

- Ensure that there is enough metal above the sling hole to prevent tear-out.
- Check that the shackle pin is fully engaged - the indicator bar should be flush.
- Always use the safety ring to prevent accidental release.
- Avoid snagging the release rope during lifting.
- Ensure sheet is adequately supported before releasing the shackle.

5.6 On Site Checks / Maintenance During Use.

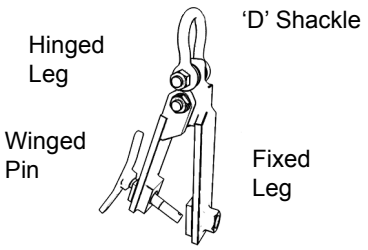
Regularly check that the shackle mechanism is working correctly and that the product has not been distorted due to overload. Regular light application of oil to the moving parts is necessary.
If the product does not operate perfectly, **DO NOT** use and contact Mabey Hire Ltd immediately.

DO NOT MODIFY THE SHACKLE OR ATTEMPT TO REPLACE PARTS AS THIS INVALIDATES THE CERTIFICATION. KEEP THE BURNING TORCH WELL CLEAR !

6. Trench Sheet Extractor Identification and Usage

Mabey Hire Ltd have two types of trench sheet extractor intended to be used as described below. There are also two types of trench sheet extractor fitted with safety chains - See separate user guide for details.

6.1 Identification



- Code: T/S-EXT
  Used on: Mabey trench sheets up to 3.55mm thick i.e. M6, M7 & M11 sheets up to 7m long.
  S.W.L: 5 Tonnes (50kN) Pin dia: 7/8" (22.2mm)
  Colour: Grey paint finish Weight: 12 Kg
  DO NOT USE A T/S-EXT TO EXTRACT TRENCH SHEETS THICKER THAN 3.55mm.
- Code: M8/M12-EXT
  Used on: Mabey trench sheets between 4 & 6mm thick i.e. M8, M12, M15, Multilock & Multisheet up to 8m long.
  S.W.L: 7 Tonnes (70kN) Pin dia: 1 1/8" (28.6mm)
  Colour: Blue paint finish Weight: 12 Kg

Check that the Extractor has been supplied with a current Report of Thorough Examination and check its expiry date.

6.2 Usage

The trench sheet extractors are designed solely for extracting trench sheets from excavations one at a time and should **NOT** be used for any other purpose. The S.W.L. which is stamped on the body of the clamp and also referred to on the documentation supplied with the extractor indicates the maximum safe vertical pulling load that the extractor is intended to sustain as the trench sheets are extracted from the ground. The extractor is not intended to be used for lifting purposes other than lowering a single sheet to the ground immediately after it has been extracted from the excavation. **DO NOT** use the extractor clamp for pitching trench sheets.

6.3 Prior to use - Check Trench Sheets to be extracted for suitability for use with clamp.

The lifting hole size in the trench sheets should be 25mm diameter for M6, M7 and M11 Sheets, 30mm diameter for M8, M12 and M15 sheets and 40 or 45mm diameter for Multisheet and Multilock sheets. The hole centre should not be less than 75mm from the top, and not more than 150mm. Ensure that there is enough metal above the hole in the trench sheet to prevent the metal tearing under the load and it is not distorted to an extent that prevents the extractor clamping properly onto the sheet as described below.

6.4 Method of operation

6.4.1 Before positioning the extractor it is necessary to unscrew and withdraw the winged pin.

6.4.2 Position the extractor vertically over the top of the trench sheet to be extracted with the fixed leg of the extractor on the excavation side of the trench sheet.

6.4.3 Align the hole on the fixed leg of the extractor with the hole in the trench sheet and the hole in the hinged leg of the extractor.

6.4.4 Screw the winged pin fully in through the hinged leg, the trench sheet and the fixed leg. Tap the winged pin with a hammer to ensure a tight fit.

6.4.5 Check that the threaded portion of the winged pin is protruding through the nut on the fixed leg of the extractor, and the clamp plates are tight against the trench sheet.

6.4.6 Using a suitable lifting appliance attached to the 'D' shackle on the trench sheet extractor, pull vertically to extract the trench sheet from the excavation. **OPERATIVES MUST KEEP WELL CLEAR.**
DO NOT try to loosen the sheets by pulling the extractor sideways. **DO NOT** snatch or shock load the extractor.

6.4.7 Once the sheet has been extracted, lower the sheet to the ground. **OPERATIVES MUST KEEP WELL CLEAR UNTIL THE SHEET IS FLAT ON THE GROUND.**

6.4.8 To release the trench sheet extractor once the sheet is flat on the ground, simply unscrew the winged pin fully and withdraw the extractor.

6.5 Important checks to be carried out during use

6.5.1 Before and regularly during use clean and examine the extractor for any faults or damage. In particular check the winged pin is not bent and that when fitted through the hole in the sheet it engages securely with the extractor body.

6.5.2 Regularly check the lifting hole in the sheets for signs of elongation. If this is noted, the extractor is being overloaded and an alternative method of extraction should be adopted.

DO NOT MODIFY THE CLAMP OR ATTEMPT TO REPLACE PARTS AS THIS INVALIDATES THE CERTIFICATION.

7. General

Since our policy is one of continual improvement, components may vary in detail from the descriptions given in this publication.

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User Information Appendix A : Provision of a Mabey Hire Site Demonstrator

Mabey Hire can, subject to availability, offer the services of a Site Demonstrator.
However, the Customer should note the following :-

A1. The Customers Responsibilities

A safe system of work remains the Customers responsibility at all times. It is his responsibility to prepare for, organise and direct the operation including :-

A1.1 Site induction for the demonstrator.

A1.2 Preparation of a method statement.

A1.3 A risk assessment.

A1.4 Selection of lifting equipment and any other equipment required to undertake the work.

A1.5 Positioning of the crane or lifting appliance.

A1.6 Banking the crane.

A1.7 Slinging the components.

A1.8 Assembling the components and installing them.

A2. Activities which the Mabey Hire Demonstrator is authorised to carry out

Mabey Hire Demonstrator is authorised to :-

A2.1 Assist in indentification of Mabey Hire components.

A2.2 Explain how they fasten together.

A2.3 Point out slinging points and special methods of lifting as noted in the user information.

A2.4 Demonstrate how to attach hoses and use pumps to extend/retract hydraulic braces.

A2.5 Draw attention to the content of the user information.

A2.6 Clarify queries with Mabey Hire scheme drawings.

The Demonstrator is NOT AUTHORISED to ‘take over’ or direct the installation.

To : Mabey Hire Limited
(Please return this completed form to the Mabey Hire depot supplying the equipment. Contact details for all the Mabey Hire depots are available both on-line at www.mabeyhire.co.uk/depot-directions/ and within our brochures)

From (Company Name) _____ Site (Address) _____

_____

Tel.No._____ Fax No. _____ _____

Re : Provision of a Mabey Hire Demonstrator on site

We confirm receipt of your User Information Appendix A - and that we would like to request the services of your Demonstrator on the following date(s) _____

Signed _____ Name (print) _____ Date _____